THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 45

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAINER WINGEN, HANS-ROLF DUBAL, CLAUS ESCHER, WOLFGANG HEMMERLING, INGRID MULLER and DIETER OHLENDORF

Appeal No. 94-1922
Application 07/879,147[1]

HEARD: SEPTEMBER 10, 1996

Before PAK, WARREN and OWENS, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the decision of the examiner finally rejecting claims through 13 through 18.

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[1] Application for patent, filed April 30, 1992. According to applicants, this application is a continuation of Application 07/494,909, filed March 9, 1990, now abandoned; which is a continuation of Application 07/181,925, filed April 15, 1988, now abandoned.

The appealed claims are represented by appealed claim 17[2] a copy of which, taken from appellants' brief, is appended to this decision. This claim is drawn to the depicted optically active, mesogenic compounds which contain at least one 1,3-dioxolane-4-carboxylate moiety that may be substituted in the -2- and -5- positions, and that contains an optically active carbon in the -4- position. The claimed compounds are prepared from optically active, mesogenic 1,3-dioxolane-4-carboxylic acid or acid chloride starting materials that contain an optically active carbon in the -4- position. The claimed compounds are disclosed to be useful as dopes in liquid-crystal mixtures.[3]

The examiner has relied on the following reference:

Krause et al. (Krause) 4,873,019 Oct. 10, 1989

The examiner has rejected claims 13 through 18 on appeal under 35 U.S.C. § 103 as being unpatentable over Krause. We reverse.

Rather than reiterate the respective positions advanced by the examiner and appellants we refer to the examiner's answer and to appellants' main and reply briefs for a complete exposition thereof.

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[2] Appellants in the brief specified that the appealed claims stand or fall together. 37 CFR § 1.192(c)(5)(1993).

[3] Specification, e.g., pages 3 and 7.

Opinion

The examiner has recognized throughout his answer that the 1,3-dioxolane-4-carboxylates of the claimed invention are specified as having an optically active carbon at the -4-position of the dioxolane ring and that Krause discloses 1,3-dioxolane compounds which can have the same structure but without indication of optical activity in the ring. Further, the examiner has clearly acknowledged that optical activity in the reference compounds is in a "different location." Thus, the examiner has based his case for obviousness on the contention that "[w]hile Krause does not disclose optical activity in the ring, an optically active compound is still disclosed."[4]

We find that the examiner correctly recognized that Krause does *not* teach optical activity in the ring as the reference discloses that the compounds thereof "can occasionally" be optically active if the "wing groups" are "branched."[5] We further observe that in the compounds of group XXI, the most specific disclosure of the otherwise generically disclosed dioxolane compounds, there is *no* branched wing group.[6] There is

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[4] Answer, page 5.

[5] Krause, column 4, lines 36 to 40.

[6] Krause, column 9, lines 7 to 16; see the definitions of formula members "Alkyl" and "A" at column 5, lines 45 to 46 and 41, respectively; see also column 1, lines 44 to 47, and column 3, line 19, to column 4, line 23.

also *no* teaching in Krause of any method which would result in the preparation of an optically active dioxolane compound. However, given this disclosure in Krause, the examiner has not provided on the record any evidence or scientific reasoning why one of ordinary skill in this art would have been led to the claimed invention as a whole other than the allegation that "[a]lthough no optical activity is shown in the ring, it can occur, due to its capability to be chiral."[7]

It is well settled that the examiner must satisfy his burden of establishing a *prima facie* case of obviousness by showing some objective teaching or suggestion in the applied prior art taken as a whole or that knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention without recourse to the teachings in appellants' disclosure. *See generally In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *the concurring opinion of Judge Nies in Oetiker*, 977 F.2d at 1447-48, 24 USPQ2d at 1446-47; *In re Jones*, 958 F.2d 347, 349-51, 21 USPQ2d 1941, 1942-44 (Fed. Cir. 1992); *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

Thus, in order to carry his burden in the case before us, the examiner must provide in the record evidence and/or scientific reasoning to establish the reasonableness of his position that optical activity would occur in the dioxolane ring

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[7] Answer, page 4.

since such a ring can be chiral, as the mere possibility or probability that such a result may inherently occur is not sufficient. *In re Williams*, 171 F.2d 319, 80 USPQ 150 (CCPA 1948); *cf. In re Adamson*, 275 F.2d 952, 125 USPQ 233 (CCPA 1960); *see also In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); *Ex parte Skinner*, 2 USPQ2d 1788, 1788-89 (Bd. Pat. App. & Int. 1986). This the examiner has not done.

Accordingly, on the record before us, we are in complete agreement with appellants that there is no direction to the optically active 1,3-dioxolane-4-carboxylates as defined in the appealed claims except for their specification.

The examiner's decision is reversed.

REVERSED

CHUNG K. PAK)
Administrative Patent Judge)
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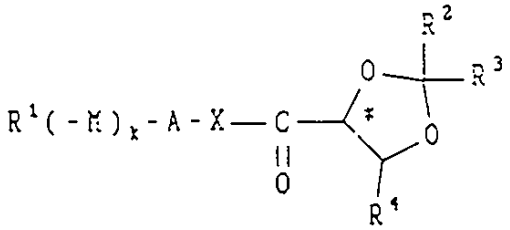
)
)
CHARLES F. WARREN) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
)
)
TERRY J. OWENS)
Administrative Patent Judge)

Appeal No. 94-1922
Application 07/879,147

Attn: William F. Lawrence
c/o Curtis, Morris & Safford
530 Fifth Avenue
New York, NY 10036

APPENDIX

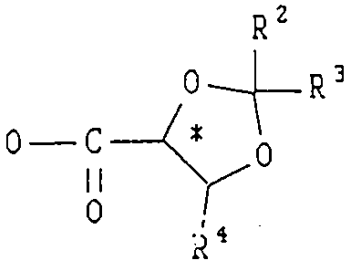
17. An optically active 1,3-dioxolane-4-carboxylate of the formula (I)



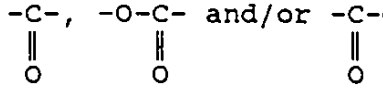
(I)

in which:

R^1 is



or a straight-chain or branched alkyl radical having 1 to 16 carbon atoms or a straight-chain or branched alkenyl radical having 3 to 16 carbon atoms, it being possible for these radicals to contain asymmetrical carbon atoms and it being possible for one or more nonadjacent $-CH_2-$ groups to be replaced by -O-, -S-, -C-, -O-C- and/or -C-O-



and for one or more H to be replaced by F, Cl, Br or CN,

R^2 and R^3 are each H or an alkyl radical having 1 to 10 carbon atoms, it being possible for one or more H of the alkyl radicals

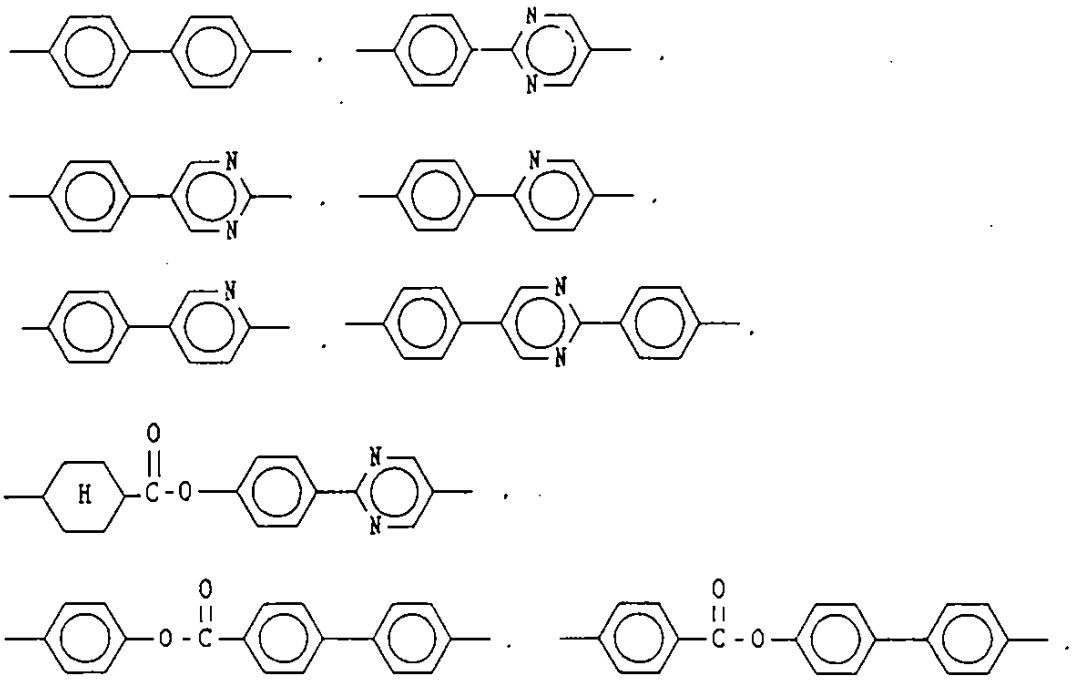
to be replaced by F; or R^2 and R^3, together with the C(2) atom of the dioxolane ring, form a cyclopentane, cyclohexane or cycloheptane ring,

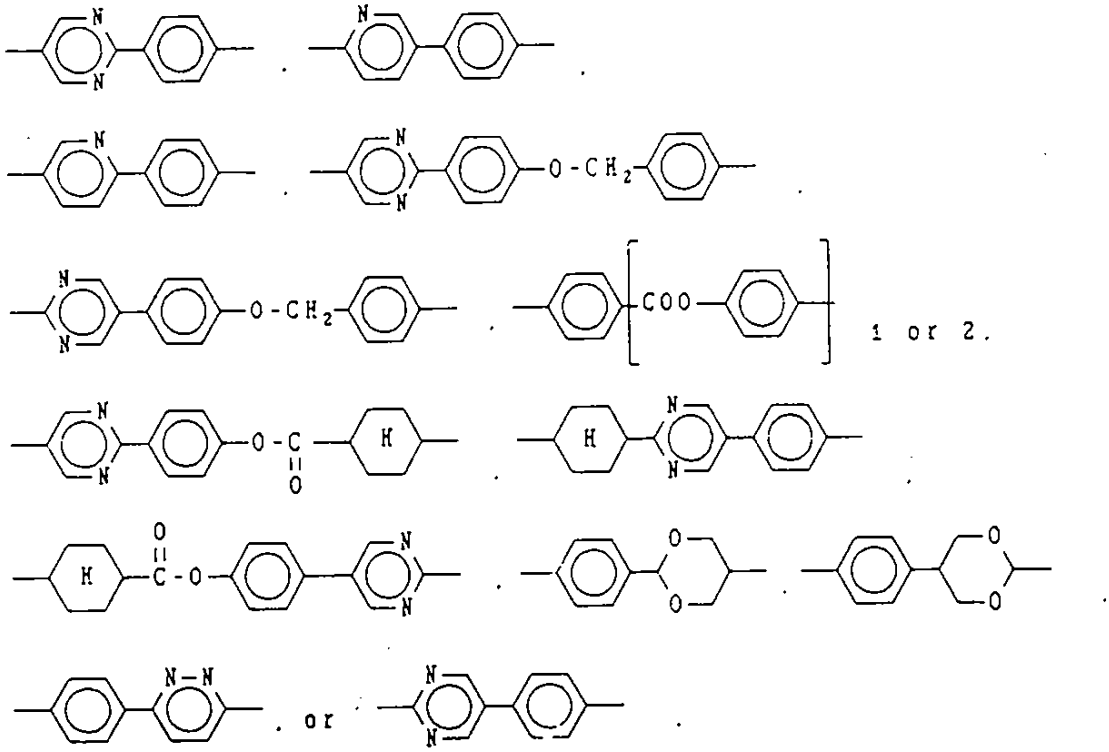
R^4 is H or an alkyl radical having 1 to 10 carbon atoms or an alkenyl radical having 2 to 10 carbon atoms,

k is zero or 1,

with the following proviso that k is zero, if R^1 is a dioxolane group or an alkyl group with a replaced $-CH_2-$ group,

-A- is:





-M is -O, -S, -O-C(=O) or -C(=O)-O and

-X is -O or -S.